



Published in final edited form as:

Epidemiology. 2015 November ; 26(6): e64–e65. doi:10.1097/EDE.0000000000000371.

Maternal Postpartum Hospitalization Following ART Births

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Studies on maternal health outcomes associated with assisted reproductive technologies (ART) have been hampered by both an inability to track maternal health beyond the delivery hospitalization and the lack of a population based comparison group of deliveries to mothers with indicators of subfertility who did not receive ART.¹ The Massachusetts Outcomes Study of Assisted Reproductive Technologies (MOSART) has linked clinical data from all Massachusetts ART clinics to population based data that enables documentation of maternal hospitalizations subsequent to delivery² and developed a comparison set of deliveries to women with indicators of subfertility who did not receive ART.³ Drawing on Massachusetts data from 2004–2008, we examined maternal rehospitalization rates (either hospital admission or observational stay) in the first 6 weeks and between 6 weeks and one year following delivery for three groups of mothers: those who received ART, mothers who had indicators of subfertility but no ART (Subfertile group), and mothers with no ART and no indicators of subfertility (Fertile group). We focused on initial hospitalizations; mothers who were hospitalized in the first six weeks were excluded from the analysis of hospitalizations from 6 weeks to one year.

Rates of maternal rehospitalization were generally low. Nevertheless, mothers who gave birth following ART were more likely to be hospitalized in the first 6 weeks postpartum (17.3/1,000 deliveries) compared to mothers with indicators of subfertility but no ART (14.3/1,000) or fertile mothers (12.4/1,000). However, this difference results primarily from the higher rates of twins and cesarean birth for the ART mothers, both of which are associated with higher rates of rehospitalization.^{4,5} The accompanying table presents the unadjusted rates and adjusted odds ratios (AOR) from logistic regression analyses for postpartum hospitalization by fertility status stratified by plurality and method of delivery.

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The content is solely the responsibility of the authors and does not necessarily represent the official views of the National Institute of Child Health and Human Development or the National Institutes of Health.

The authors report no conflict of interest.

Singletons

Patterns of unadjusted rates of maternal rehospitalization by fertility status varied across each subgroup. Among singletons, mothers with ART births had lower rates of rehospitalization in three of the four possible comparisons. With the Fertile group as the reference in the multivariate analysis, hospitalization among ART mothers was generally comparable in the first 6 weeks, with the largest AOR (1.32; 95% C.I. 0.99, 1.78) in the case of singleton, vaginal births. When the Subfertile group was the reference there were no differences in likelihood of rehospitalization for the ART group in any of the four comparisons. The AOR for the ART deliveries when Subfertile was the reference was 1.12 [0.73, 1.73] for hospitalization after a singleton vaginal birth within 42 days and less than 1.00 in every other case (data not shown).

Twins

Among twin births, the number of rehospitalizations in all the Subfertile groups and among ART vaginal births between 42–365 days was too small for analysis, but the mothers in the ART group were equal to or less likely than mothers in the Fertile group to have a postpartum hospitalization in every available comparison based on both the unadjusted rates and the adjusted odds ratios, regardless of method of delivery or time period examined.

These findings suggest that mothers with deliveries following ART are generally at no greater risk of postpartum hospitalization in singleton births than mothers with indicators of subfertility who did not receive ART or mothers with neither ART nor an indicator of subfertility. After twin births, rehospitalizations for mothers conceiving with ART were comparable to or less likely than those to mothers in the Fertile group.

ART treatment did not result in increased risk of postpartum maternal hospitalizations when compared to subfertile women with no ART treatment and to fertile women.

Acknowledgments

The project described was supported by Award Numbers R01HD064595 and R01HD067270 from the National Institute of Child Health and Human Development.

The authors wish to thank additional members of the MOSART team: Bruce Cohen; Dmitri Kissin; Thien Nguyen; and Donna Richard.

SART wishes to thank all of its members for providing clinical information to the SART CORS database for use by patients and researchers. Without the efforts of our members, this research would not have been possible.

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Unadjusted Rates and Adjusted^a Odds Ratios for Post-Partum hospitalization^b within 42 days or 42–365 days, Massachusetts, 2004–2008, by Fertility Status, Plurality and Method of Delivery

Table 1

Method of Delivery	Fertility Group	Singletons						Twins							
		<42 days			42–365 days			<42 days			42–365 days				
		Hosp. Rate per 1,000	AOR*	95% CI	Hosp. Rate per 1,000	AOR*	95% CI	n	Hosp. Rate per 1,000	AOR*	95% CI	Hosp. Rate per 1,000	AOR*	95% CI	
Vaginal	Fertile	209,288	10.2	1.00	(Reference)	23.0	1.00	(Reference)	1,382	29.7	1.00	(Reference)	25.4	1.00	(Reference)
	Subfertile	3,173	11.7	1.18	(0.85, 1.65)	21.8	1.20	(0.91, 1.58)	158	c	c	c	c	c	c
Cesarean	ART	3,483	13.8	1.32	(0.99, 1.78)	17.5	1.15	(0.88, 1.49)	530	24.5	0.71	(0.35, 1.46)	c	c	c
	Fertile	94,696	16.6	1.00	(Reference)	24.8	1.00	(Reference)	2,919	24.0	1.00	(Reference)	27.8	1.00	(Reference)
	Subfertile	2,394	17.5	1.21	(0.88, 1.65)	23.6	1.30	(1.01, 1.66)	370	c	c	c	c	c	c
	ART	3,010	15.9	1.04	(0.77, 1.40)	21.7	1.13	(0.87, 1.47)	1,875	24.0	0.99	(0.62, 1.57)	21.3	0.92	(0.58, 1.46)

^aMultiple logistic regression adjusted for: Maternal age, education, race, marital status, delivery payer source, parity, gestational age, yes/no for other medical conditions related to fertility (*AOR=adjusted odds ratio)

^bHospital admission or observational stay per 1,000 deliveries

^cToo few cases to report.